

Regulation 12 Rule 12 Reportable Flaring Event Causal Analysis Report

1. **Report Date:** May 24, 2022
2. **Refinery Name and Site Number:** Martinez Refining Company - BAAQMD Site # A0011
3. **Refinery Contact and Phone Number:** Rick Shih (925) 313-0586
4. **Flare Identification:** LOP flare S-1471
5. **Flaring Event Duration:**
 - a. **Start Date:** March 17, 2022
 - b. **Time:** 2:50 PM – 3:17 PM
 - c. **Total Duration of Event:** approximately 0.5 hours
6. **Brief Description of Flaring Event:** Brief trip of Hydrocracker Unit (HCU) and Saturates Gas Plant (SGP) resulted in flaring and emissions of more than 500 pounds of sulfur dioxide from LOP Flare.
7. **Process Flow Diagram:** see attached process flow diagram
8. **Volume of Gas Flared:** 0.24 MMSCF
9. **Total Emissions due to flaring based on Regulation 12 Rule 11 Methodology:**
 - a. 87 lbs of methane
 - b. 232 lbs of non-methane hydrocarbons
 - c. 910 lbs of sulfur dioxide
10. **Was the Gas Scrubbed?** The vent gas that went to the flare was not scrubbed.
11. **Primary Cause of Flaring Event including Detailed Description of the Cause and Contributing Factors:**

Flaring was caused by an inadvertent shutdown of portions of the hydrocracker unit (HCU) and Saturates Gas Plant (SGP) during testing of a control system. The HCU is used to convert feed into lighter products through the use of high pressure, high temperature catalyst and hydrogen. The Saturates Gas Plant (SGP) serves to separate heavier hydrocarbon from process gases.

During testing of a control system (), the laptop used during the test unexpectedly went into standby mode. In the process of bringing the laptop to the normal mode, a command was inadvertently sent while the screen was still blank that shutdown portions of the HCU and SGP, resulting in the temporary loss of the multiple units including the 2nd stage HCU and SGP compressor. The 1st stage HCU was already down at the time. This caused the auto-depressuring of the HCU 2nd stage system and flaring at LOP. After the control system was restored, the equipment was safely restarted and flaring stopped.

12. **Immediate Corrective Actions Taken:**

After the control system was restored, the equipment was safely restarted and flaring stopped.
13. **Was the Flaring the Result of an Emergency?**

Regulation 12 Rule 12 defines “Emergency” as “a condition at a petroleum refinery beyond the reasonable control of the owner or operator requiring immediate corrective action to restore normal

and safe operation that is caused by a sudden, infrequent and not reasonably preventable equipment failure, natural disaster, act of war or terrorism or external power curtailment, excluding power curtailment due to an interruptible power service agreement from a utility.” The inadvertent shut down of the HCU and SGP systems caused in an unplanned emergency situation that resulted in evacuation of the immediate area and material being safely sent to the flare.

14. Was the Flaring Consistent with an Approved FMP?

Yes, the flaring was consistent with Martinez Refining Company approved Flare Management Plan (FMP). As stated on page 3-1 of the FMP, Martinez Refining Company believes the key to flare minimization is careful planning to avoid flaring coupled with evaluation of any flaring events that occur and incorporation of lessons learned back into the planning process to further reduce flaring. As part of the FMP, Martinez Refining Company developed procedures to implement this process. As stated on page 3-1 of the FMP, “when these procedures are followed, any flaring is consistent with the FMP.” Operations followed procedure C(F)-20 – Unanticipated Flaring. This procedure addresses flare events caused by process upsets or unplanned events.

15. Was the Flaring due to a Regulatory Mandate to Vent to a Flare?

The flaring was not due to a regulatory mandate to vent to the flare.

16. Prevention Measures Considered or Implemented to Minimize Flaring from this Type of Flaring Event

To minimize the opportunity of sending inadvertent commands during control system testing, the laptop has been configured so it will not go into standby mode during testing.

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Public Version

Figure 1: Process Flow Diagram LOP Flare System with HCU and SGP

[This figure has been redacted from the Public Version as it contains Business Confidential Information]